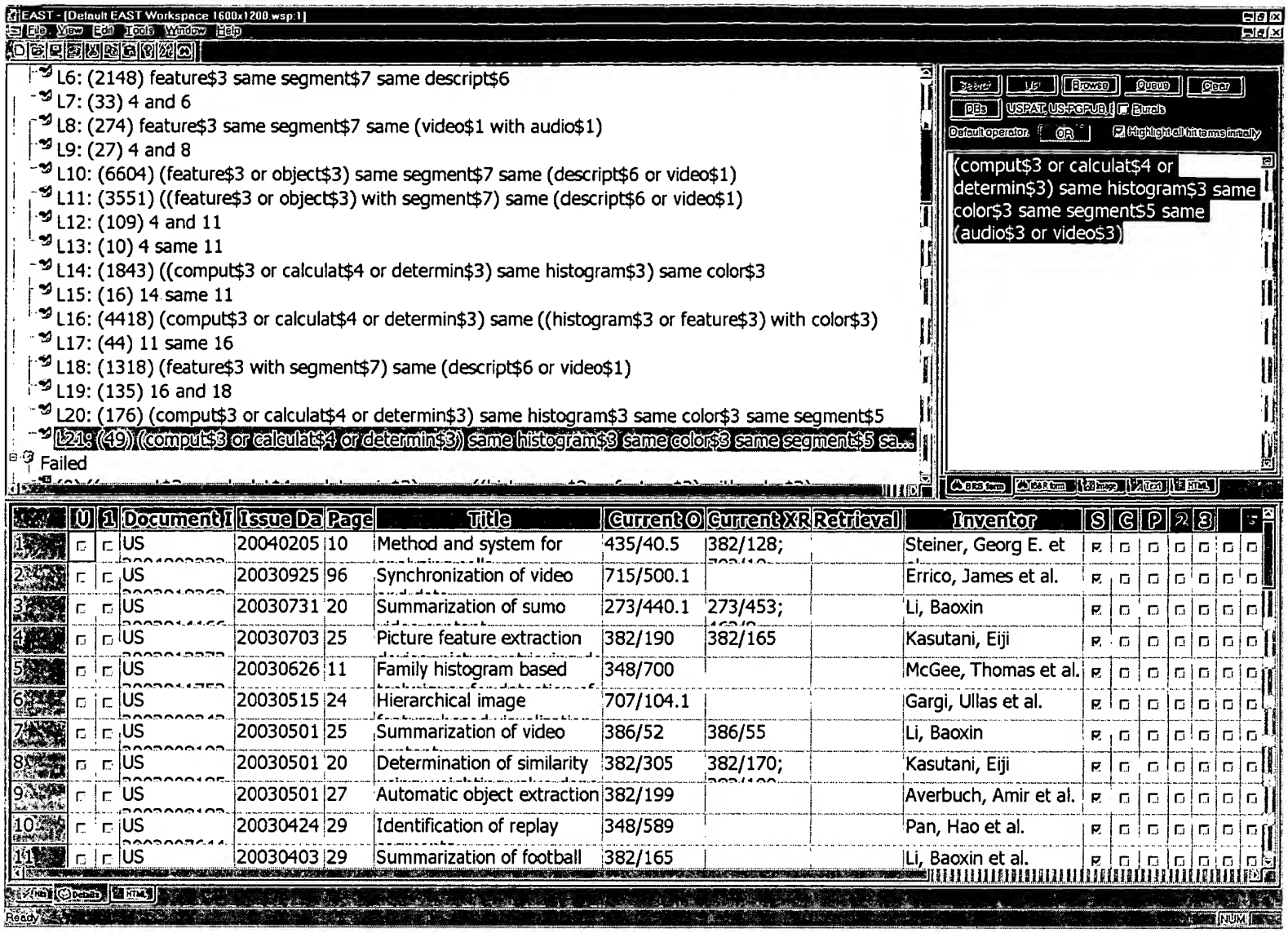

	U	1	Document I	Issue Da	Page	Title	Current O	Current XR	Retrieval	Inventor	S	G	P	2	3	
1			US	20040205	10	Method and system for	435/40.5	382/128;		Steiner, Georg E. et						
2			US	20030925	96	Synchronization of video	715/500.1			Errico, James et al.						
3			US	20030731	20	Summarization of sumo	273/440.1	273/453;		Li, Baoxin						
4			US	20030703	25	Picture feature extraction	382/190	382/165		Kasutani, Eiji						
5			US	20030626	11	Family histogram based	348/700			McGee, Thomas et al.						
6			US	20030515	24	Hierarchical image	707/104.1			Gargi, Ullas et al.						
7			US	20030501	25	Summarization of video	386/52	386/55		Li, Baoxin						
8			US	20030501	20	Determination of similarity	382/305	382/170;		Kasutani, Eiji						
9			US	20030501	27	Automatic object extraction	382/199			Averbuch, Amir et al.						
10			US	20030424	29	Identification of replay	348/589			Pan, Hao et al.						
11			US	20030403	29	Summarization of football	382/165			Li, Baoxin et al.						

EAST - [Default EAST Workspace 1600x1200 wsp:1]

File View Edit Tools Window Help

- L6: (2148) feature$3 same segment$7 same descript$6
- L7: (33) 4 and 6
- L8: (274) feature$3 same segment$7 same (video$1 with audio$1)
- L9: (27) 4 and 8
- L10: (6604) (feature$3 or object$3) same segment$7 same (descript$6 or video$1)
- L11: (3551) ((feature$3 or object$3) with segment$7) same (descript$6 or video$1)
- L12: (109) 4 and 11
- L13: (10) 4 same 11
- L14: (1843) ((comput$3 or calculat$4 or determin$3) same histogram$3) same color$3
- L15: (16) 14 same 11
- L16: (4418) (comput$3 or calculat$4 or determin$3) same ((histogram$3 or feature$3) with color$3)
- L17: (44) 11 same 16
- L18: (1318) (feature$3 with segment$7) same (descript$6 or video$1)
- L19: (135) 16 and 18
- L20: (176) (comput$3 or calculat$4 or determin$3) same histogram$3 same color$3 same segment$5
- L21: (49) (comput$3 or calculat$4 or determin$3) same histogram$3 same color$3 same segment$5 sa...

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Refresh List Browse Queue Clear

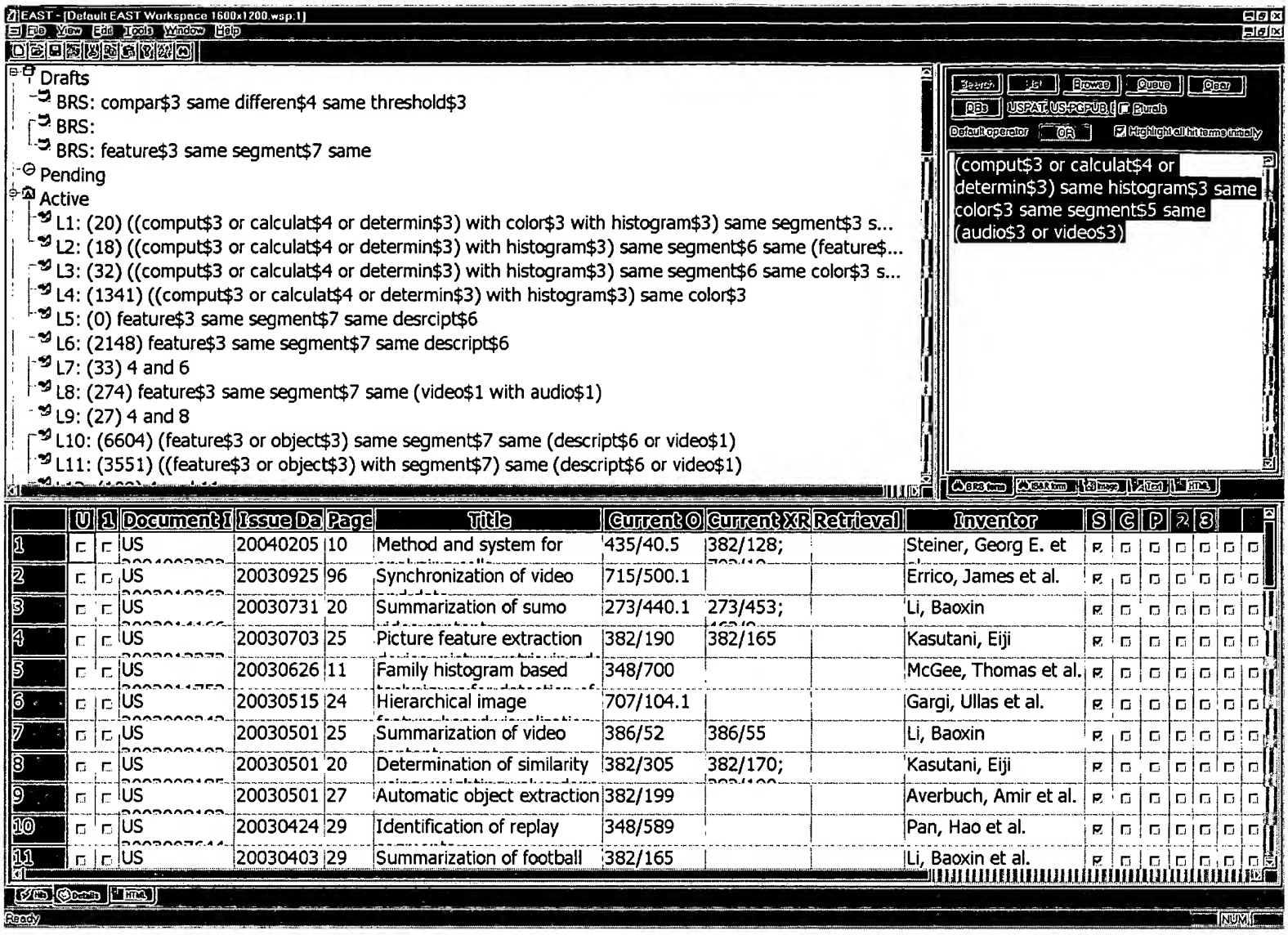
DBs USPAT; US-PGPUB; Derwent

Default operator: OR Highlight all hit terms initially

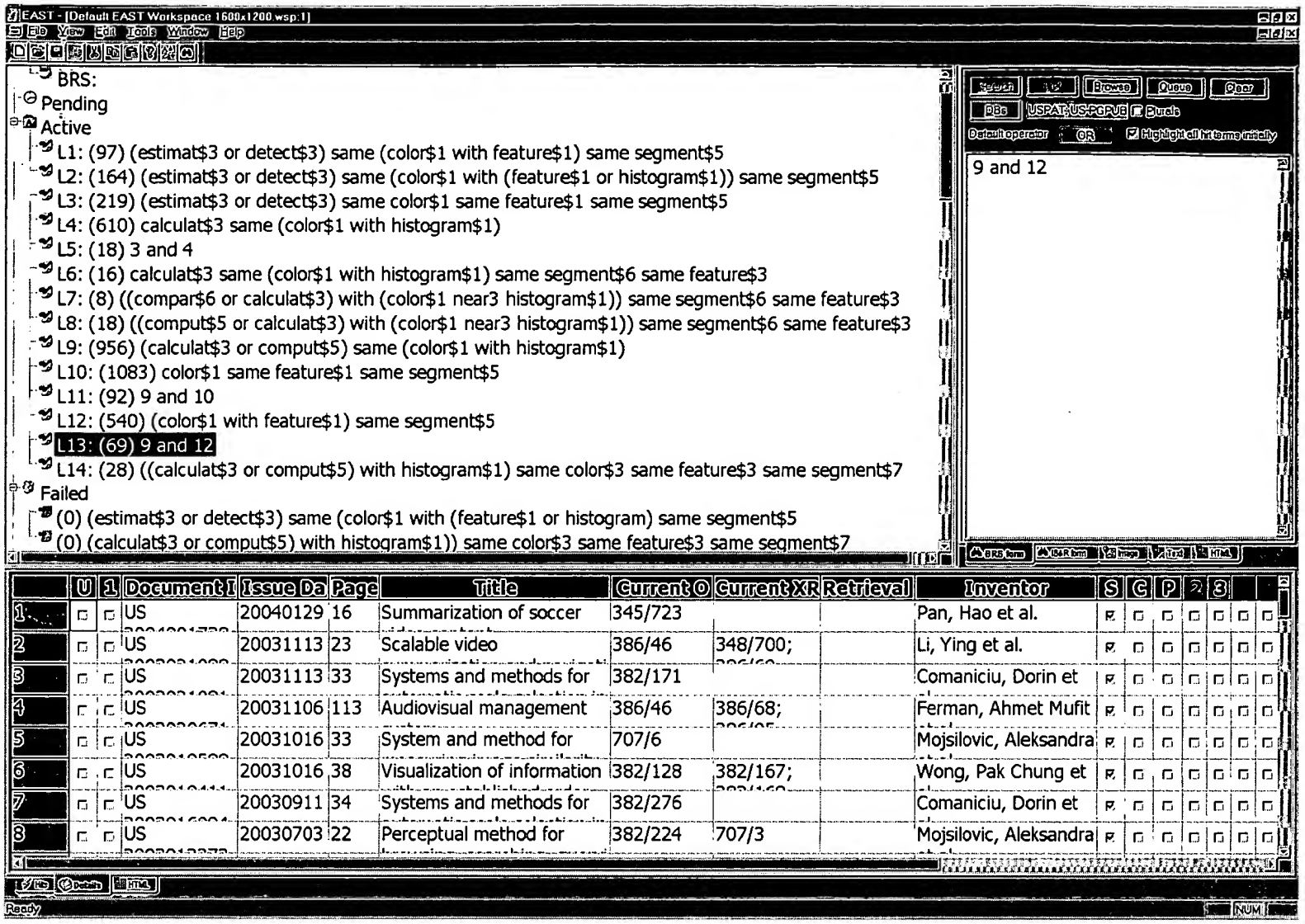
(comput$3 or calculat$4 or determin$3) same histogram$3 same color$3 same segment$5 same (audio$3 or video$3)

	U	1	Document I	Issue Da	Page	Title	Current O	Current XR	Retrieval	Inventor	S	C	P	2	3
1	☐	☐	US	20040205	10	Method and system for	435/40.5	382/128;		Steiner, Georg E. et	☑	☐	☐	☐	☐
2	☐	☐	US	20030925	96	Synchronization of video	715/500.1			Errico, James et al.	☑	☐	☐	☐	☐
3	☐	☐	US	20030731	20	Summarization of sumo	273/440.1	273/453;		Li, Baoxin	☑	☐	☐	☐	☐
4	☐	☐	US	20030703	25	Picture feature extraction	382/190	382/165		Kasutani, Eiji	☑	☐	☐	☐	☐
5	☐	☐	US	20030626	11	Family histogram based	348/700			McGee, Thomas et al.	☑	☐	☐	☐	☐
6	☐	☐	US	20030515	24	Hierarchical image	707/104.1			Gargi, Ullas et al.	☑	☐	☐	☐	☐
7	☐	☐	US	20030501	25	Summarization of video	386/52	386/55		Li, Baoxin	☑	☐	☐	☐	☐
8	☐	☐	US	20030501	20	Determination of similarity	382/305	382/170;		Kasutani, Eiji	☑	☐	☐	☐	☐
9	☐	☐	US	20030501	27	Automatic object extraction	382/199			Averbuch, Amir et al.	☑	☐	☐	☐	☐
10	☐	☐	US	20030424	29	Identification of replay	348/589			Pan, Hao et al.	☑	☐	☐	☐	☐
11	☐	☐	US	20030403	29	Summarization of football	382/165			Li, Baoxin et al.	☑	☐	☐	☐	☐

Ready NUM



	U	1	Document I	Issue Da	Page	Title	Current O	Current XR	Retrieval	Inventor	S	C	P	2	3		
1	□	□	US	20040205	10	Method and system for	435/40.5	382/128;		Steiner, Georg E. et	☑	□	□	□	□	□	□
2	□	□	US	20030925	96	Synchronization of video	715/500.1			Errico, James et al.	☑	□	□	□	□	□	□
3	□	□	US	20030731	20	Summarization of sumo	273/440.1	273/453;		Li, Baoxin	☑	□	□	□	□	□	□
4	□	□	US	20030703	25	Picture feature extraction	382/190	382/165		Kasutani, Eiji	☑	□	□	□	□	□	□
5	□	□	US	20030626	11	Family histogram based	348/700			McGee, Thomas et al.	☑	□	□	□	□	□	□
6	□	□	US	20030515	24	Hierarchical image	707/104.1			Gargi, Ullas et al.	☑	□	□	□	□	□	□
7	□	□	US	20030501	25	Summarization of video	386/52	386/55		Li, Baoxin	☑	□	□	□	□	□	□
8	□	□	US	20030501	20	Determination of similarity	382/305	382/170;		Kasutani, Eiji	☑	□	□	□	□	□	□
9	□	□	US	20030501	27	Automatic object extraction	382/199			Averbuch, Amir et al.	☑	□	□	□	□	□	□
10	□	□	US	20030424	29	Identification of replay	348/589			Pan, Hao et al.	☑	□	□	□	□	□	□
11	□	□	US	20030403	29	Summarization of football	382/165			Li, Baoxin et al.	☑	□	□	□	□	□	□



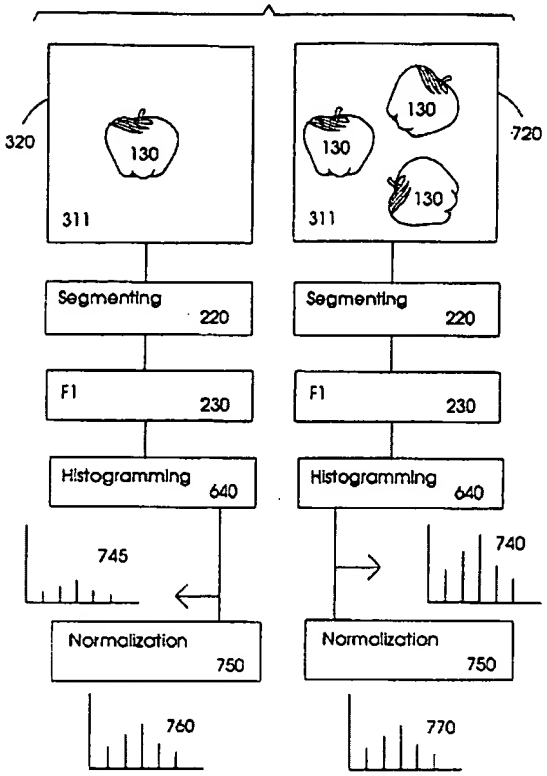
	U	1	Document I	Issue Da	Page	Title	Current O	Current XR	Retrieval	Inventor	S	G	P	2	3		
1			US	20040129	16	Summarization of soccer	345/723			Pan, Hao et al.							
2			US	20031113	23	Scalable video	386/46	348/700;		Li, Ying et al.							
3			US	20031113	33	Systems and methods for	382/171			Comaniciu, Dorin et							
4			US	20031106	113	Audiovisual management	386/46	386/68;		Ferman, Ahmet Mufit							
5			US	20031016	33	System and method for	707/6			Mojsilovic, Aleksandra							
6			US	20031016	38	Visualization of information	382/128	382/167;		Wong, Pak Chung et							
7			US	20030911	34	Systems and methods for	382/276			Comaniciu, Dorin et							
8			US	20030703	22	Perceptual method for	382/224	707/3		Mojsilovic, Aleksandra							

01/29/1999

and 760 respectively) are identical. This res
image
720 with a larger number of objects 131 will c
to
each bin of the histogram 740 than the image 3
objects
131 will contribute to its respective histogra
effect occurs if the size of the object 131 is
in
the other 320.) For example, area normalizing
normalized histograms (760, 770) because the c
image to its histogram is divided by its respe

	Document I	Kind Code	Source	Issue D	Pages
10	US 2003000		US-PGP	2003010	13
11	US 2003000		US-PGP	2003010	56
12	US 2002006		US-PGP	2002052	22
13	US 2002005		US-PGP	2002051	34
14	US 2001000		US-PGP	2001062	18
15	US 2001000		US-PGP	2001062	18
16	US 6606409		USPAT	2003081	18
17	US 6487554		USPAT	2002112	16
18	US 6411953		USPAT	2002062	17
19	US 6295371		USPAT	2001092	13
20	US 6278949		USPAT	2001082	21
21	US 6195458		USPAT	2001022	17
22	US 5960104		USPAT	1999092	26
23	US 5933524		USPAT	1999080	9
24	US 5911002		USPAT	1999060	15
25	US 5576950		USPAT	1996111	23
26	US 5546475		USPAT	1996081	29
27	US 4175860		USPAT	1979112	11

FIG. 7



EAST Browser - L13: (69) 9 and 12 | US 6621926 | Tag: S | Doc: 45/69 | "Full" 3/9 (Total images 9)

File Edit View Tools Window Help

US-PAT-NO: 6621926

DOCUMENT-IDENTIFIER: US 6621926 B1

TITLE: Image retrieval syste
histogram

---------- KWIC ---------

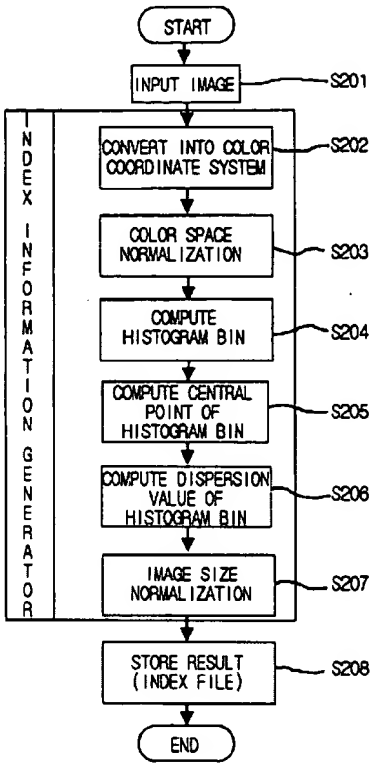
Abstract Text - ABTX (1):
An image retrieval system and method usin
determining central points and dispersion va
information of color about respective histog

Details | Text | Image | HTML | KWIC

	Document I	Kind Code	Source	Issue D	Pages
28	US 2002010		US-PGP	2002080	25
29	US 2002009		US-PGP	2002072	17
30	US 2002008		US-PGP	2002062	15
31	US 2002007		US-PGP	2002062	14
32	US 2002006		US-PGP	2002060	115
33	US 2002006		US-PGP	2002053	81
34	US 2002006		US-PGP	2002052	22
35	US 2002005		US-PGP	2002051	126
36	US 2002005		US-PGP	2002051	15
37	US 2002005		US-PGP	2002051	34
38	US 2002004		US-PGP	2002041	103
39	US 2002002		US-PGP	2002030	67
40	US 2001001		US-PGP	2001080	38
41	US 6675174		USPAT	2004010	40
42	US 6674907		USPAT	2004010	21
43	US 6643643		USPAT	2003110	12
44	US 6636635		USPAT	2003102	94
45	US 6621926		USPAT	2003091	9

Details | Text | Image | HTML

FIG.2



Details | Text | Image | HTML | Full

EAST Browser - L13: (69) 9 and 12 | US 6584223 | Tag: S | Doc: 46/69 | "Full" 1/46 (Total images 46)

File Edit View Tools Window Help

Laid-Open Patent No. 8-249349 discloses patter
amounts
(representative colors) of a plurality of bloc
image. However, in this technique, the distan
of
two image blocks to be matched must be compute
computation volume. When a representative col

three, i.e., R, G, and B data must be processe
computations. Also, since comparison is made
itself,
high comparison precision can be obtained but
obtained by a search even due to a change in a

position of an object. In other words, a so-c
search

Details | Text | Image | HTML | KWIC

	Document I	Kind Code	Source	Issue D	Pages
29	US 2002009		US-PGP	2002072	17
30	US 2002008		US-PGP	2002062	15
31	US 2002007		US-PGP	2002062	14
32	US 2002006		US-PGP	2002060	115
33	US 2002006		US-PGP	2002053	81
34	US 2002006		US-PGP	2002052	22
35	US 2002005		US-PGP	2002051	126
36	US 2002005		US-PGP	2002051	15
37	US 2002005		US-PGP	2002051	34
38	US 2002004		US-PGP	2002041	103
39	US 2002002		US-PGP	2002030	67
40	US 2001001		US-PGP	2001080	38
41	US 6675174		USPAT	2004010	40
42	US 6674907		USPAT	2004010	21
43	US 6643643		USPAT	2003110	12
44	US 6636635		USPAT	2003102	94
45	US 6621926		USPAT	2003091	9
46	US 6584223		USPAT	2003062	46

Details | Text | Image | HTML

US006584223B1

(12) **United States Patent**
Shiiyama

(10) Patent No.: US 6,584,223 B1
(45) Date of Patent: Jun. 24, 2003

(54) **IMAGE SEARCH APPARATUS AND METHOD**

(75) Inventor: Hirotaka Shiiyama, Machida (JP)

(73) Assignee: Canon Kabushiki Kaisha, Tokyo (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/281,783

(22) Filed: Mar. 31, 1999

(30) Foreign Application Priority Data

Apr. 2, 1998 (JP) 10-090133
Apr. 30, 1998 (JP) 10-121064

(51) Int. Cl.[7] G06K 9/34; G06K 9/46; G06K 9/68

(52) U.S. Cl. 382/173; 382/190; 382/180; 382/192; 382/218; 382/219

(58) Field of Search 382/164, 173, 382/180, 190, 192, 195, 203, 205, 209, 215, 218, 219, 305, 227, 306, 358/403; 707/3, 6

(56) References Cited

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6,181,818 B1 * 1/2001 Sato et al. 382/170
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"Decoding Image Semantics Using Composite Region Templates", J.R. Smith, et al., Proceedings, IEEE Workshop on content-Based Access of Image and Video Libraries (CAT No. 98EX173), Santa Barbara, CA, pp 9-13, Jun. 21, 1998.

"An Image Database System with Fast Image Indexing Capability Based on Color Histograms", G. Yihong, et al., Proceedings of the Region 10 Annual International Conference (TENCON) IEEE, vol. CONF. 9, pp 407-411, Aug. 22, 1994.

U.S. Ser. No. 08/972,433, Filed Nov. 18, 1997, now pending.

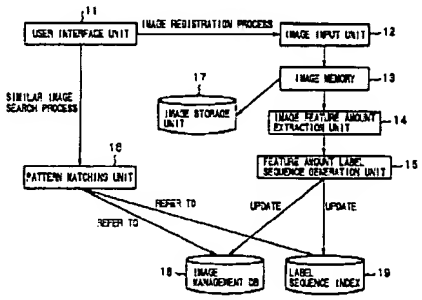
* cited by examiner

Primary Examiner—Phuoc Tran
Assistant Examiner—Amir Alavi
(74) *Attorney, Agent, or Firm*—Fitzpatrick, Cella, Harper & Scinto

(57) **ABSTRACT**

An image feature amount extraction unit and feature amount label matrix generation unit generate a label sequence from image data. An image management DB stores image data stored in an image storage unit and label sequences corresponding to the image data in correspondence with each other. A label sequence index registers, in units of labels, image data including the labels and the numbers of labels included in those image data. Upon search, a pattern matching unit extracts label sequences which are similar to the label sequence of a query image to some extent from the label sequence index, computes similarities between the extracted label sequences, and the label sequence of the query image, and outputs images, in which the computed similarities exceed a predetermined value, as search results.

72 Claims, 27 Drawing Sheets



Details | Text | Image | HTML | Full

EAST Browser - L13: (69) 9 and 12 | US 6556711 | Tag: S | Doc: 47/69 | "Full" 1/80 (Total images 80)

File Edit View Tools Window Help

US-PAT-NO: 6556711

DOCUMENT-IDENTIFIER: US 6556711 B2

TITLE: Image processing appara

---------- KWIC ---------

Brief Summary Text - BSTX (14):

An example of a method of segmenting a colo threshold-value method (see "Structuring of Co Partition Processing", Journal of Information Vol.

Details Text Image HTML KWIC

	Document I	Kind Code	Source	Issue D	Pages
30	US 2002008		US-PGP	2002062	15
31	US 2002007		US-PGP	2002062	14
32	US 2002006		US-PGP	2002060	115
33	US 2002006		US-PGP	2002053	81
34	US 2002006		US-PGP	2002052	22
35	US 2002005		US-PGP	2002051	126
36	US 2002005		US-PGP	2002051	15
37	US 2002005		US-PGP	2002051	34
38	US 2002004		US-PGP	2002041	103
39	US 2002002		US-PGP	2002030	67
40	US 2001001		US-PGP	2001080	38
41	US 6675174		USPAT	2004010	40
42	US 6674907		USPAT	2004010	21
43	US 6643643		USPAT	2003110	12
44	US 6636635		USPAT	2003102	94
45	US 6621926		USPAT	2003091	9
46	US 6584223		USPAT	2003062	46
47	US 6556711		USPAT	2003042	80

Details Text Image HTML

US006556711B2

(12) **United States Patent**
Koga et al.

(10) **Patent No.: US 6,556,711 B2**
(45) **Date of Patent: Apr. 29, 2003**

(54) **IMAGE PROCESSING APPARATUS AND METHOD**

(75) Inventors: Shinichiro Koga, Utsunomiya (JP); Yoshihiro Ishida, Kawasaki (JP); Osamu Yoshizaki, Hachioji (JP)

(73) Assignee: Canon Kabushiki Kaisha, Tokyo (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/162,727

(22) Filed: Sep. 30, 1998

(65) Prior Publication Data

US 2002/0064307 A1 May 30, 2002

Related U.S. Application Data

(62) Division of application No. 08/579,358, filed on Dec. 27, 1995, now Pat. No. 5,848,185.

(30) Foreign Application Priority Data

Dec. 28, 1994 (JP) 6-325111
Jun. 6, 1995 (JP) 7-141692

(51) Int. Cl.[7] G06K 9/34

(52) U.S. Cl. 382/173; 382/299; 358/462; 358/464

(58) Field of Search 382/164, 173, 382/176, 177, 180, 298, 299; 358/453, 462, 464

(56) References Cited

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JP 4-157872 A 5/1992
JP 4-356873 A 12/1992
JP 05274472 * 10/1993 ..... G06K/9/20

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Yamaa et al.; "Multimedia Document Structuring Processing System", The Journal of the Institute of Image Electronics Engineers of Japan, vol. 19, No. 5, pp. 286-295, 1990.

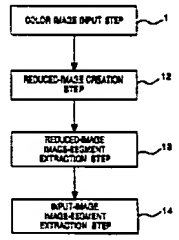
(List continued on next page.)

Primary Examiner—Jingge Wu
(74) *Attorney, Agent, or Firm*—Fitzpatrick, Cella, Harper & Scinto

(57) **ABSTRACT**

A digital color image to be processed is inputted at a color image input step, image segments are extracted from the input color image at an image-segment extraction step, and the data of the extracted image segments is created. Next, image-segment components in each extracted image segment are discriminated at an image-segment discrimination step, and each extracted image segment is subjected to zoom processing, which conforms to the discriminated image-segment component, at an adaptive zoom step, thereby creating a zoomed image of the input image. The zoomed image that has been created is displayed, outputted as a hard copy or delivered to a transmission line at a color image output step. Accordingly, a color image in which image segments having different characteristics are mixed can be subjected to excellent processing.

10 Claims, 55 Drawing Sheets



Details Text Image HTML Full

EAST Browser - L13: (69) 9 and 12 | US 6236395 | Tag: S | Doc: 59/69 | "Full" 14/44 (Total images 44)

File Edit View Tools Window Help

be generated either in part or in its entirety
appropriate user input interface (e.g., speech
Users can input to the camera the program desc
especially those high-level (or semantic) info
difficult to automatically extract by the syst
parameters (e.g., date and time), as well as c
camera
(e.g., color histogram to be included in the c

in generating the program description scheme.
the system can browse the camera content, or t
its description scheme to the local storage fo
possible to update or add information to the c
the camera.

Detailed Description Text - DETX (645):

Details | Text | Image | HTML | KWIC

	Document I	Kind Code	Source	Issue D	Pages
42	US 6674907		USPAT	2004010	21
43	US 6643643		USPAT	2003110	12
44	US 6636635		USPAT	2003102	94
45	US 6621926		USPAT	2003091	9
46	US 6584223		USPAT	2003062	46
47	US 6556711		USPAT	2003042	80
48	US 6512846		USPAT	2003012	24
49	US 6504951		USPAT	2003010	23
50	US 6487554		USPAT	2002112	16
51	US 6411953		USPAT	2002062	17
52	US 6411724		USPAT	2002062	11
53	US 6404925		USPAT	2002061	64
54	US 6400853		USPAT	2002060	37
55	US 6373979		USPAT	2002041	15
56	US 6295367		USPAT	2001092	44
57	US 6282317		USPAT	2001082	19
58	US 6263088		USPAT	2001071	43
59	US 6236395		USPAT	2001052	44

Details | Text | Image | HTML

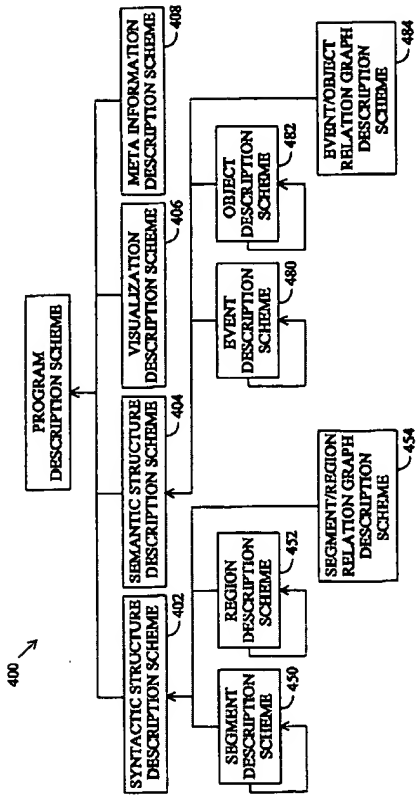


FIG. 13

Details | Text | Image | HTML | Full

EAST Browser - L13: (69) 9 and 12 | US 6185314 | Tag: S | Doc: 60/69 | "Full" 5/43 (Total images 43)

File Edit View Tools Window Help

US-PAT-NO: 6185314

DOCUMENT-IDENTIFIER: US 6185314 B1

TITLE: System and method for m
object model information

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Detailed Description Text - DETX (197):
The features extracted for each region clus
moment
features, contour features and color features.
have

Details | Text | Image | HTML | KWIC

	Document I	Kind Code	Source	Issue D	Pages
43	US 6643643		USPAT	2003110	12
44	US 6636635		USPAT	2003102	94
45	US 6621926		USPAT	2003091	9
46	US 6584223		USPAT	2003062	46
47	US 6556711		USPAT	2003042	80
48	US 6512846		USPAT	2003012	24
49	US 6504951		USPAT	2003010	23
50	US 6487554		USPAT	2002112	16
51	US 6411953		USPAT	2002062	17
52	US 6411724		USPAT	2002062	11
53	US 6404925		USPAT	2002061	64
54	US 6400853		USPAT	2002060	37
55	US 6373979		USPAT	2002041	15
56	US 6295367		USPAT	2001092	44
57	US 6282317		USPAT	2001082	19
58	US 6263088		USPAT	2001071	43
59	US 6236395		USPAT	2001052	44
60	US 6185314		USPAT	2001020	43

Details | Text | Image | HTML

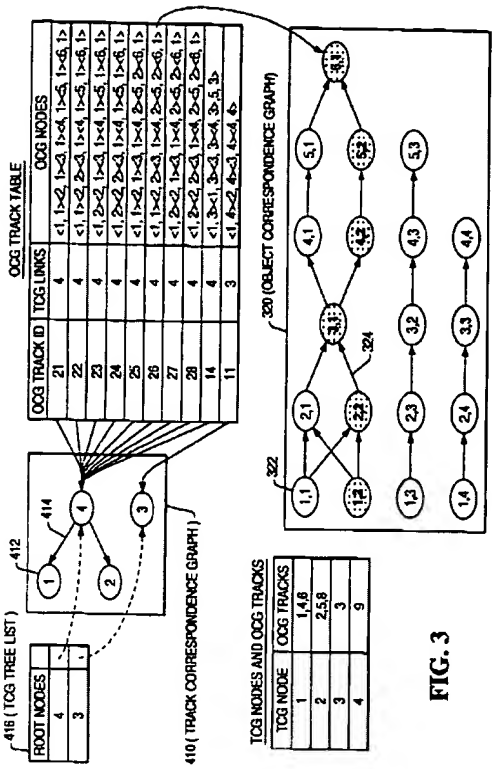


FIG. 3

Details | Text | Image | HTML | Full

EAST Browser - L13: (69) 9 and 12 | US 5911002 | Tag: S | Doc: 63/69 | "Full" 4/15 (Total images 15)

File Edit View Tools Window Help

US-PAT-NO: 5911002

DOCUMENT-IDENTIFIER: US 5911002 A

TITLE: Pattern recognition sys

---------- KWIC ---------

Brief Summary Text - BSTX (4):

The techniques capable of automatically exe examination are disclosed in, for instance, JP JP-A-63-94156, and JP-A-5-296915, in which sol contained in the urine are photographed as sti conventional

Details | Text | Image | HTML | KWIC

	Document I	Kind Code	Source	Issue D	Pages
46	US 6584223		USPAT	2003062	46
47	US 6556711		USPAT	2003042	80
48	US 6512846		USPAT	2003012	24
49	US 6504951		USPAT	2003010	23
50	US 6487554		USPAT	2002112	16
51	US 6411953		USPAT	2002062	17
52	US 6411724		USPAT	2002062	11
53	US 6404925		USPAT	2002061	64
54	US 6400853		USPAT	2002060	37
55	US 6373979		USPAT	2002041	15
56	US 6295367		USPAT	2001092	44
57	US 6282317		USPAT	2001082	19
58	US 6263088		USPAT	2001071	43
59	US 6236395		USPAT	2001052	44
60	US 6185314		USPAT	2001020	43
61	US 5960104		USPAT	1999092	26
62	US 5933524		USPAT	1999080	9
63	US 5911002		USPAT	1999060	15

Details | Text | Image | HTML

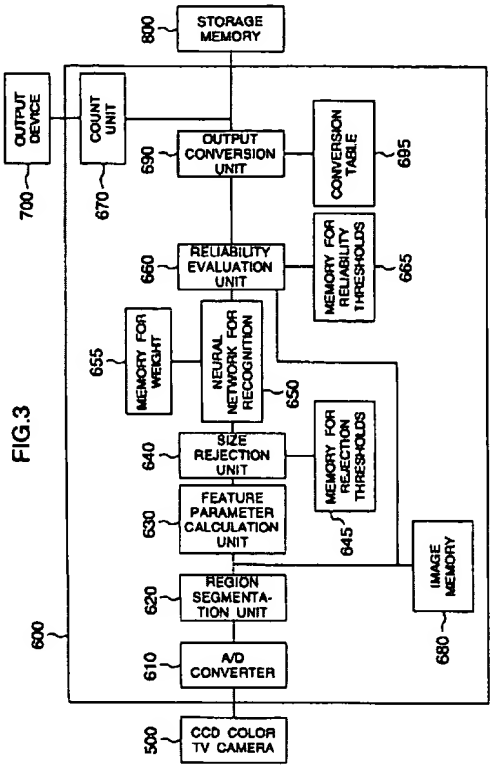


FIG.3

Details | Text | Image | HTML | Full

EAST Browser - L13: (69) 9 and 12 | US 5848185 | Tag: S | Doc: 65/69 | "Full" 7/83 (Total images 83)

File Edit View Tools Window Help

US-PAT-NO: 5848185

DOCUMENT-IDENTIFIER: US 5848185 A
See image for Certificate of Correction

TITLE: Image processing appara

---------- KWIC ---------

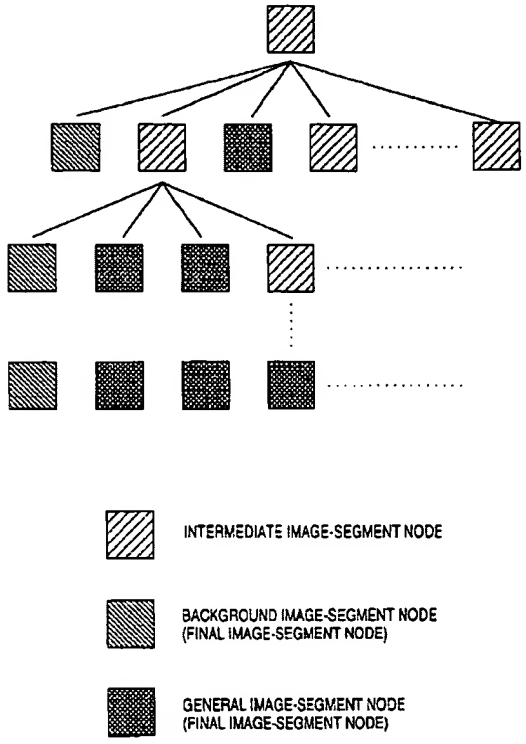
Brief Summary Text - BSTX (14):
An example of a method of segmenting a colo threshold-value method (see "Structuring of Co Partition Processing", Journal of Information Vol.

Details Text Image HTML KWIC

	Document I	Kind Code	Source	Issue D	Pages
48	US 6512846		USPAT	2003012	24
49	US 6504951		USPAT	2003010	23
50	US 6487554		USPAT	2002112	16
51	US 6411953		USPAT	2002062	17
52	US 6411724		USPAT	2002062	11
53	US 6404925		USPAT	2002061	64
54	US 6400853		USPAT	2002060	37
55	US 6373979		USPAT	2002041	15
56	US 6295367		USPAT	2001092	44
57	US 6282317		USPAT	2001082	19
58	US 6263088		USPAT	2001071	43
59	US 6236395		USPAT	2001052	44
60	US 6185314		USPAT	2001020	43
61	US 5960104		USPAT	1999092	26
62	US 5933524		USPAT	1999080	9
63	US 5911002		USPAT	1999060	15
64	US 5883968		USPAT	1999031	27
65	US 5848185		USPAT	1998120	83

Details Text Image HTML

FIG. 5A



Details Text Image HTML Full

with another based on, for example, color hist
similarity
step, images are found by luminance feature ve
the
image into regions and computing color histogr

spatial information in the image is preserved.
the
top-ranking images resulting from the initial
again
for similarity using a color-histogram similar
similarity
approach.

Details Text Image HTML KWIC

	Document I	Kind Code	Source	Issue D	Pages
1	US 2004001		US-PGP	2004012	16
2	US 2003022		US-PGP	2003121	23
3	US 2003012		US-PGP	2003070	25
4	US 2003007		US-PGP	2003042	29
5	US 2003000		US-PGP	2003010	15
6	US 2002016		US-PGP	2002110	17
7	US 2002013		US-PGP	2002092	18
8	US 2002013		US-PGP	2002091	20
9	US 2002006		US-PGP	2002052	22
10	US 2002002		US-PGP	2002030	67
11	US 2001000		US-PGP	2001062	18
12	US 2001000		US-PGP	2001062	18
13	US 6606409		USPAT	2003081	18
14	US 6404925		USPAT	2002061	64
15	US 6373979		USPAT	2002041	15
16	US 6195458		USPAT	2001022	17
17	US 5911002		USPAT	1999060	15
18	US 5576950		USPAT	1996111	23

Details Text Image HTML

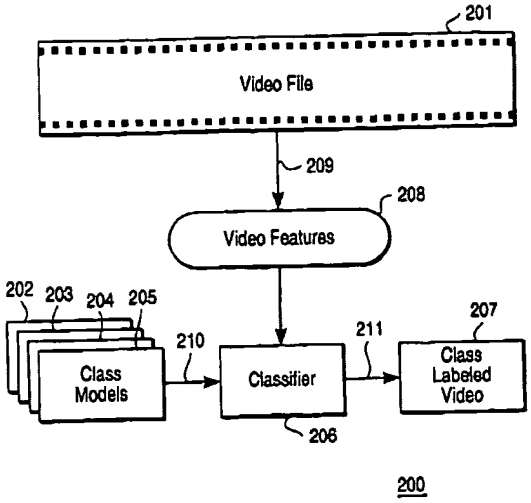


FIG. 2

Details Text Image HTML Full

EAST Browser - L5: (18) 3 and 4 | US 6373979 | Tag: S | Doc: 15/18 | "Full" 6/15 (Total images 15)

File Edit View Tools Window Help

US-PAT-NO: 6373979

DOCUMENT-IDENTIFIER: US 6373979 B1

TITLE: System and method for c
similarity
among more than one imag
structure
for enabling such determ

---------- KWIC ----------

Brief Summary Text - BSTX (11):
FIGS. 4A and 4B describe yet another conver

Details | Text | Image | HTML | KWIC

	Document I	Kind Code	Source	Issue D	Pages
1	US 2004001		US-PGP	2004012	16
2	US 2003022		US-PGP	2003121	23
3	US 2003012		US-PGP	2003070	25
4	US 2003007		US-PGP	2003042	29
5	US 2003000		US-PGP	2003010	15
6	US 2002016		US-PGP	2002110	17
7	US 2002013		US-PGP	2002092	18
8	US 2002013		US-PGP	2002091	20
9	US 2002006		US-PGP	2002052	22
10	US 2002002		US-PGP	2002030	67
11	US 2001000		US-PGP	2001062	18
12	US 2001000		US-PGP	2001062	18
13	US 6606409		USPAT	2003081	18
14	US 6404925		USPAT	2002061	64
15	US 6373979		USPAT	2002041	15
16	US 6195458		USPAT	2001022	17
17	US 5911002		USPAT	1999060	15
18	US 5576950		USPAT	1996111	23

Details | Text | Image | HTML

FIGURE 5

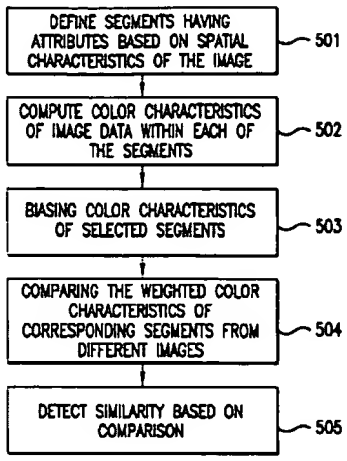
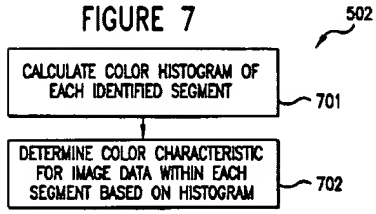


FIGURE 7



Details | Text | Image | HTML | Full

EAST Browser - L6: (16) calculat$3 s... | US 6606409 | Tag: S | Doc: 9/16 | "Full" 7/18 (Total images 18)

File Edit View Tools Window Help

first 145 of shot boundary locations within the
identified
by numerical frame number. Those skilled in th
other
frame comparison metrics can be used in either
with
the color histogram and pixel difference metric
without
departing from the scope of the invention. Fur
frame differences, absolute frame differences,
histogram comparison, or any other function tha

in the computed metric values across shot bound
level of activity within individual shots can b
comparison function may be computed over the en
certain predefined spatial window within the fr
multiple spatial segments within successive fra

Details Text Image HTML KWIC

	Document I	Kind Code	Source	Issue D	Pages
1	US 2003012		US-PGP	2003070	25
2	US 2003010		US-PGP	2003061	25
3	US 2002006		US-PGP	2002052	22
4	US 2002005		US-PGP	2002051	34
5	US 2002004		US-PGP	2002041	103
6	US 2001000		US-PGP	2001062	18
7	US 2001000		US-PGP	2001062	18
8	US 6636635		USPAT	2003102	94
9	US 6606409		USPAT	2003081	18
10	US 6278949		USPAT	2001082	21
11	US 6195458		USPAT	2001022	17
12	US 5933524		USPAT	1999080	9
13	US 5911002		USPAT	1999060	15
14	US 5576950		USPAT	1996111	23
15	US 4175860		USPAT	1979112	11
16	JP 2001155		JPO	2001060	

Details Text Image HTML

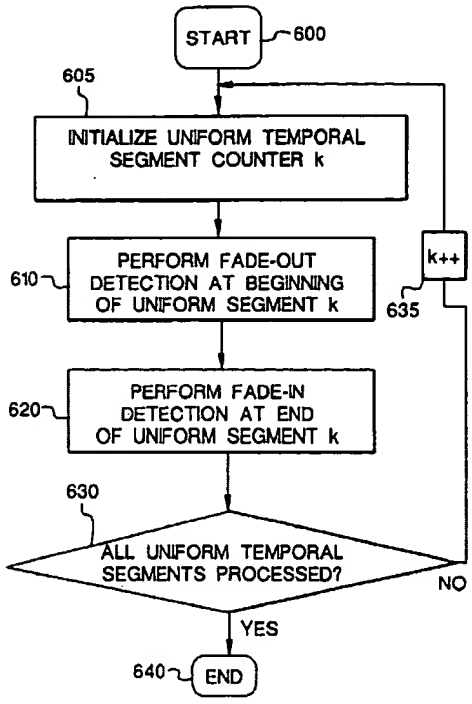
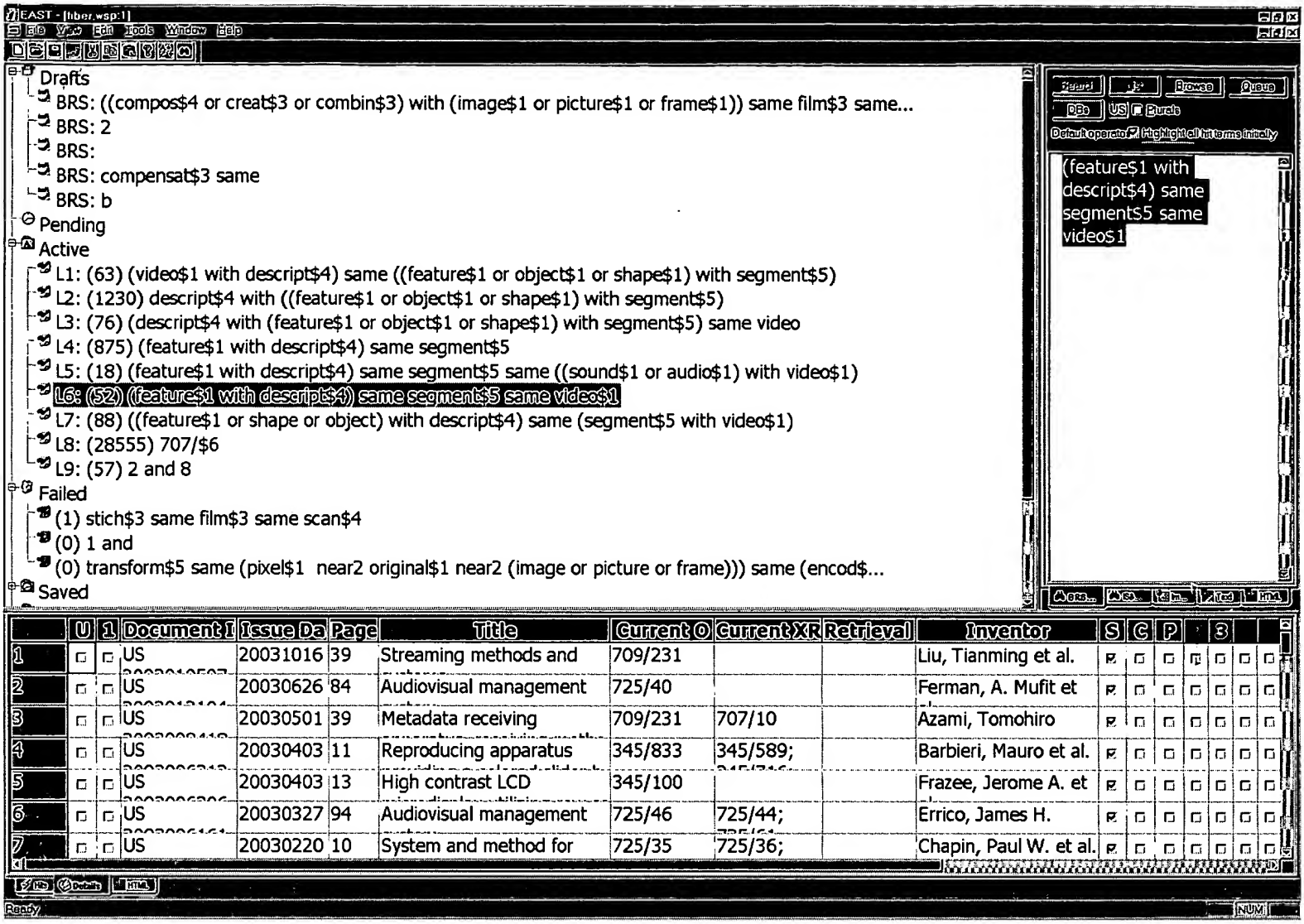


FIG. 6

Details Text Image HTML Full



	U	1	Document I	Issue Da	Page	Title	Current O	Current XR	Retrieval	Inventor	S	C	P		3		
1	☐	☐	US	20031016	39	Streaming methods and	709/231			Liu, Tianming et al.	☑	☐	☐	☐	☐	☐	☐
2	☐	☐	US	20030626	84	Audiovisual management	725/40			Ferman, A. Mufit et	☑	☐	☐	☐	☐	☐	☐
3	☐	☐	US	20030501	39	Metadata receiving	709/231	707/10		Azami, Tomohiro	☑	☐	☐	☐	☐	☐	☐
4	☐	☐	US	20030403	11	Reproducing apparatus	345/833	345/589;		Barbieri, Mauro et al.	☑	☐	☐	☐	☐	☐	☐
5	☐	☐	US	20030403	13	High contrast LCD	345/100			Frazee, Jerome A. et	☑	☐	☐	☐	☐	☐	☐
6	☐	☐	US	20030327	94	Audiovisual management	725/46	725/44;		Errico, James H.	☑	☐	☐	☐	☐	☐	☐
7	☐	☐	US	20030220	10	System and method for	725/35	725/36;		Chapin, Paul W. et al.	☑	☐	☐	☐	☐	☐	☐

EAST Browser - L12: (65) video$1 sem... | US 20030035479 | Tag: S | Doc: 12/65 | "Full" 1/14 (Total images 14)

File Edit View Tools Window Help

DOCUMENT-IDENTIFIER: US 20030035479 A1

TITLE: Method of using MPEG segmentation

---------- KWIC ---------

Abstract Paragraph - ABTX (1):
The invention relates to a method of usin to
extract a desired moving or still image obje extracting
the feature of an existing video object Plan

Details | Text | Image | HTML | KWIC

	Document I	Kind Code	Source	Issue D	Pages
1	US 2003019		US-PGP	2003101	39
2	US 2003017		US-PGP	2003091	25
3	US 2003014		US-PGP	2003073	20
4	US 2003013		US-PGP	2003071	6
5	US 2003012		US-PGP	2003062	84
6	US 2003008		US-PGP	2003050	39
7	US 2003008		US-PGP	2003050	25
8	US 2003007		US-PGP	2003042	29
9	US 2003006		US-PGP	2003040	29
10	US 2003006		US-PGP	2003032	94
11	US 2003005		US-PGP	2003032	16
12	US 2003003		US-PGP	2003022	14
13	US 2003003		US-PGP	2003022	24
14	US 2003001		US-PGP	2003011	9
15	US 2002017		US-PGP	2002112	18
16	US 2002017		US-PGP	2002112	15
17	US 2002015		US-PGP	2002103	12
18	US 2002015		US-PGP	2002101	30

Details | Text | Image | HTML

US 20030035479A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2003/0035479 A1**

Kan et al. (43) **Pub. Date: Feb. 20, 2003**

(54) METHOD OF USING MPEG-7 STANDARD IN OBJECT SEGMENTATION

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(73) Assignee: NATIONAL CHUNG CHENG UNIVERSITY, Chia-Yi 621 (TW)

(21) Appl. No.: 09/989,541

(22) Filed: Nov. 21, 2001

(30) Foreign Application Priority Data

Aug. 14, 2001 (TW) 90119851

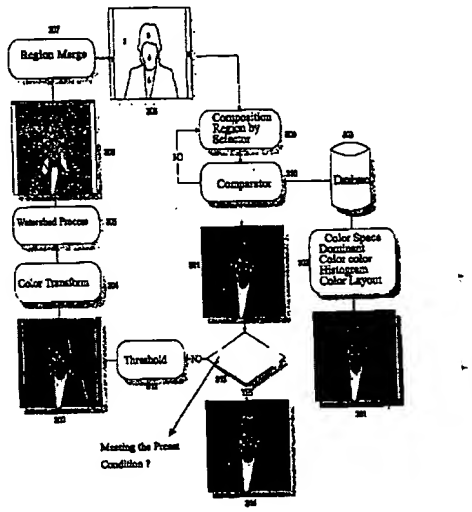
Publication Classification

(51) Int. Cl.[7] H04N 7/12

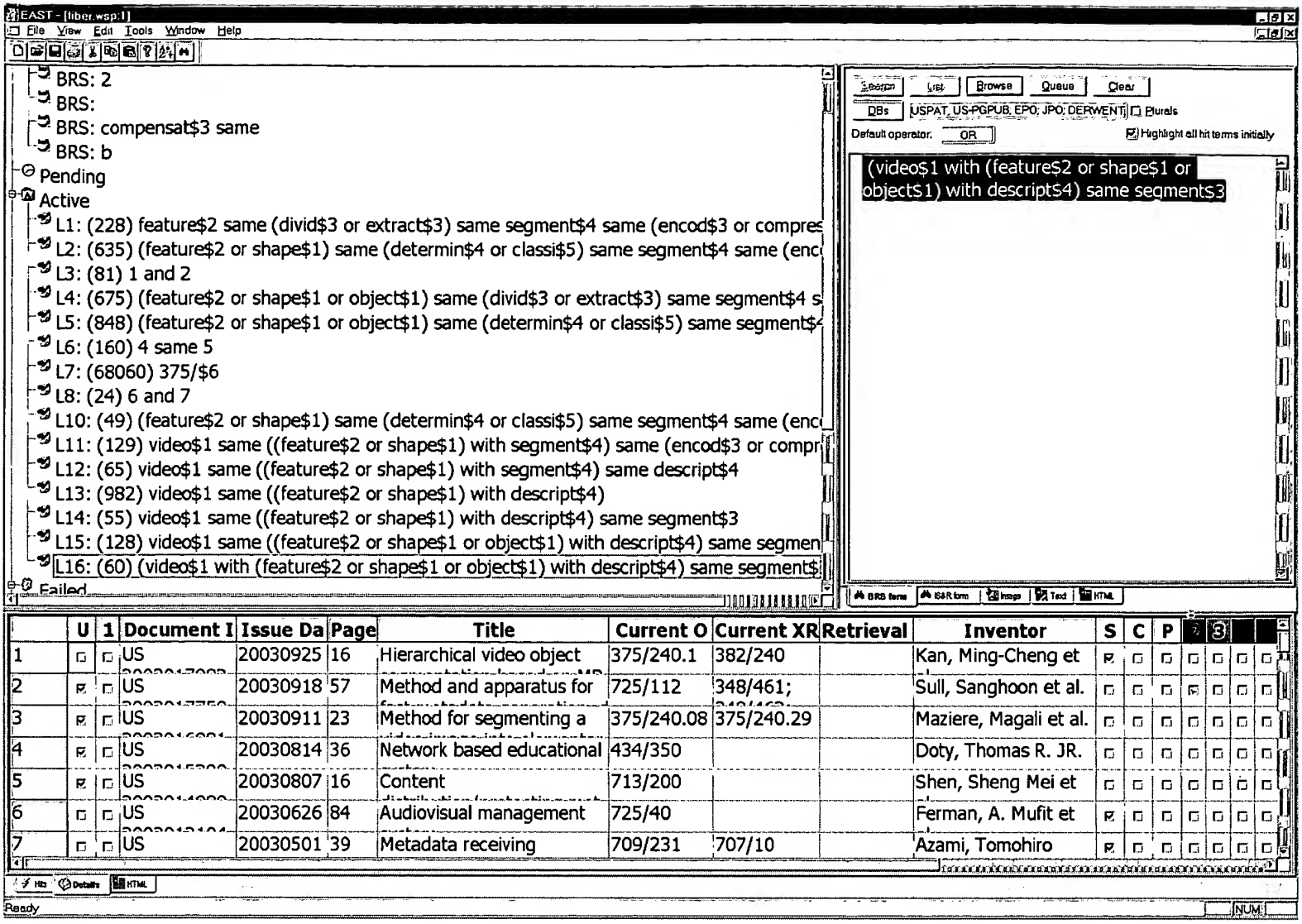
(52) U.S. Cl. 375/240.12; 375/240.01; 375/240.08

(57) ABSTRACT

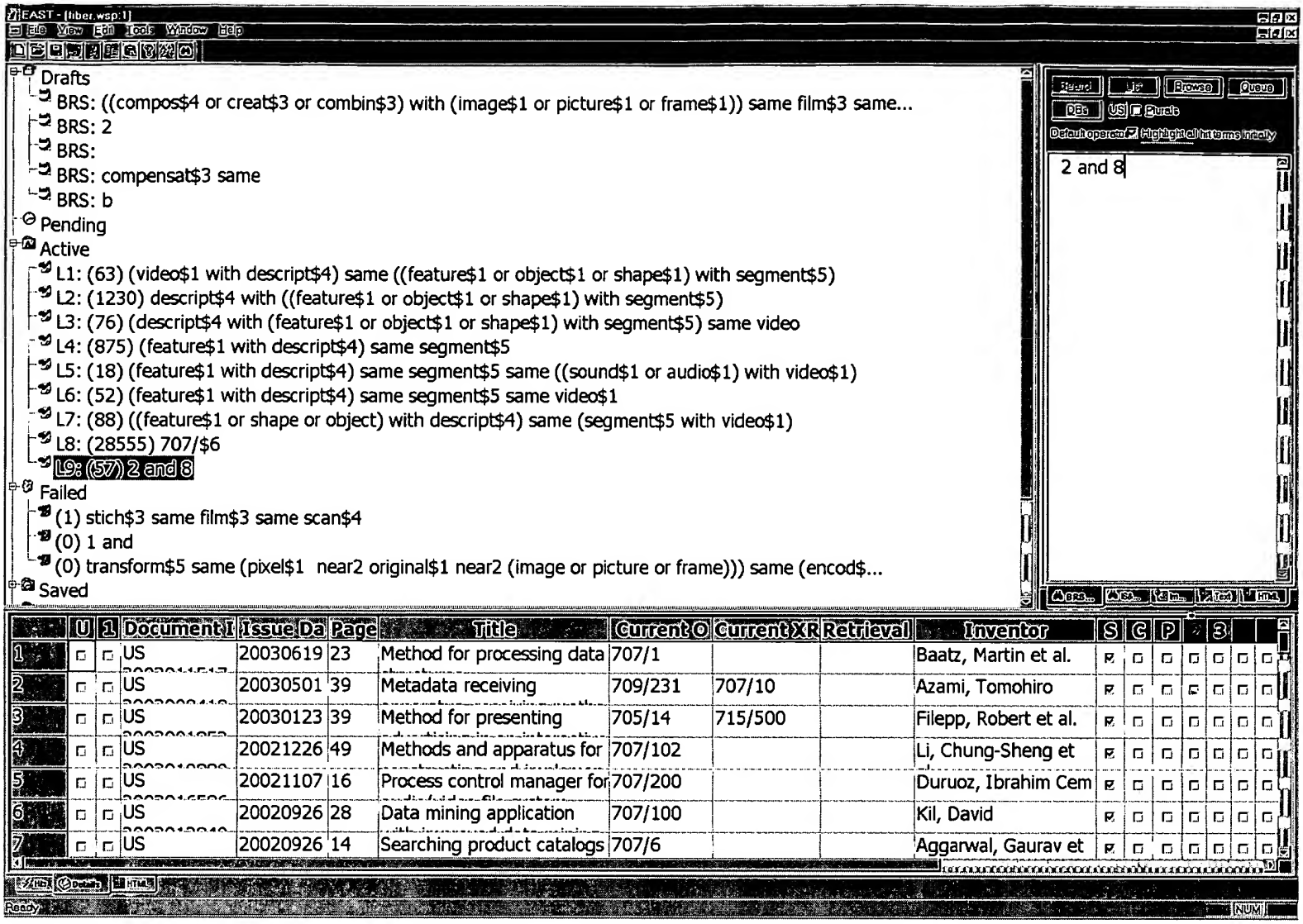
The invention relates to a method of using MPEG-7 in object segmentation to extract a desired moving or still image object. The method includes extracting the feature of an existing video object Plane (VOP) by MPEG-7 technique and storing it in an MPEG-7 database, segmenting an input image into a plurality of objects by using the watershed process, comparing each of the plurality of objects to the stored object descriptor feature, and extracting the shape and position of the most similar object in the input image.



Details | Text | Image | HTML | Full



	U	1	Document I	Issue Da	Page	Title	Current O	Current XR	Retrieval	Inventor	S	C	P
1	☐	☐	US	20030925	16	Hierarchical video object	375/240.1	382/240		Kan, Ming-Cheng et	☑	☐	☐
2	☑	☐	US	20030918	57	Method and apparatus for	725/112	348/461;		Sull, Sanghoon et al.	☐	☐	☐
3	☑	☐	US	20030911	23	Method for segmenting a	375/240.08	375/240.29		Maziere, Magali et al.	☐	☐	☐
4	☑	☐	US	20030814	36	Network based educational	434/350			Doty, Thomas R. JR.	☐	☐	☐
5	☑	☐	US	20030807	16	Content	713/200			Shen, Sheng Mei et	☐	☐	☐
6	☐	☐	US	20030626	84	Audiovisual management	725/40			Ferman, A. Mufit et	☑	☐	☐
7	☐	☐	US	20030501	39	Metadata receiving	709/231	707/10		Azami, Tomohiro	☑	☐	☐



	U	1	Document I	Issue Da	Page	Title	Current O	Current XR	Retrieval	Inventor	S	C	P		3		
1	☐	☐	US	20030619	23	Method for processing data	707/1			Baatz, Martin et al.	☑	☐	☐	☐	☐	☐	☐
2	☐	☐	US	20030501	39	Metadata receiving	709/231	707/10		Azami, Tomohiro	☑	☐	☐	☐	☐	☐	☐
3	☐	☐	US	20030123	39	Method for presenting	705/14	715/500		Filepp, Robert et al.	☑	☐	☐	☐	☐	☐	☐
4	☐	☐	US	20021226	49	Methods and apparatus for	707/102			Li, Chung-Sheng et	☑	☐	☐	☐	☐	☐	☐
5	☐	☐	US	20021107	16	Process control manager for	707/200			Duruoz, Ibrahim Cem	☑	☐	☐	☐	☐	☐	☐
6	☐	☐	US	20020926	28	Data mining application	707/100			Kil, David	☑	☐	☐	☐	☐	☐	☐
7	☐	☐	US	20020926	14	Searching product catalogs	707/6			Aggarwal, Gaurav et	☑	☐	☐	☐	☐	☐	☐